



INSTITUTE FOR DEVELOPMENT RESEARCH ADVOCACY
AND APPLIED CARE

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THE TOVA ®
TEST OF VARIABLES OF ATTENTION
BY LAWRENCE M. GREENBERG

Name: L. [REDACTED] U. [REDACTED]

Date of Birth: [REDACTED] 2008

Date of Test: August 28, 2023

Age: 15 years

Version Used: Auditory version

Medication: None

Behavioral Observations: L. [REDACTED] was concentrating all

along the test administration.

L. [REDACTED]'s results indicate the following:

1) An inconsistency in the variability of his attention

2) A slow response style

Remarks: 3) A high level of impulsivity

4) A high level of distractibility

The Global profile is impaired and is in favor of the presence of an Attention Deficit Disorder. However, these results should be interpreted with caution taking into consideration all the aspects of the clinical assessment

Younna Cassir Haddad D.E.S.S.

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Child & Adolescent
Psychologist



The Test Of Variables of Attention (T.O.V.A.®)

The **Test of Variables of Attention (T.O.V.A.)** is a state-of-the-art continuous performance test that provides objective measurements of attention and inhibitory control for children and adults (ages 4 - 80+). It augments subjective measures (e.g., behavior ratings and history) and provides a more comprehensive picture of attention and inhibitory control.



The T.O.V.A. continuously measures performance during a 10.8-minute task or a 21.6-minute task, depending on age. It records speed, accuracy, and consistency of responses to a series of squares (in the visual T.O.V.A. test) or tones (in the auditory T.O.V.A. test) that are presented in two-second intervals. These measurements (accurate to ± 1 ms) are then compared by age and gender to a large normative sample (a sample of people without attention problems). This comparison determines whether the test results are "within normal limits" or not. The T.O.V.A. also compares results to a group of people independently diagnosed with ADHD. The T.O.V.A. report is based on these two comparisons, as well as performance, session, and response validity measures.



If you have questions about this report, please contact the person who provided it to you. For more information about attention and the T.O.V.A., please visit our website at <https://www.tovatest.com/>. To contact us please email info@tovatest.com or call 800.PAY.ATTN (562.594.7700).



Summary

ID: 702 L [REDACTED] U [REDACTED] ([REDACTED] 2008)
Male - 15y [REDACTED]

Auditory T.O.V.A. (v8.3-447 sn20542)
Aug 28, 2023 at 10:53 AM

Session and Response Validity

This session meets session and response validity criteria.

T.O.V.A. Interpretation

The results of this T.O.V.A. are not within normal limits, and may be suggestive of a possible attention deficit, including ADHD. Please see the Interpretation Notes page for important information about this report.

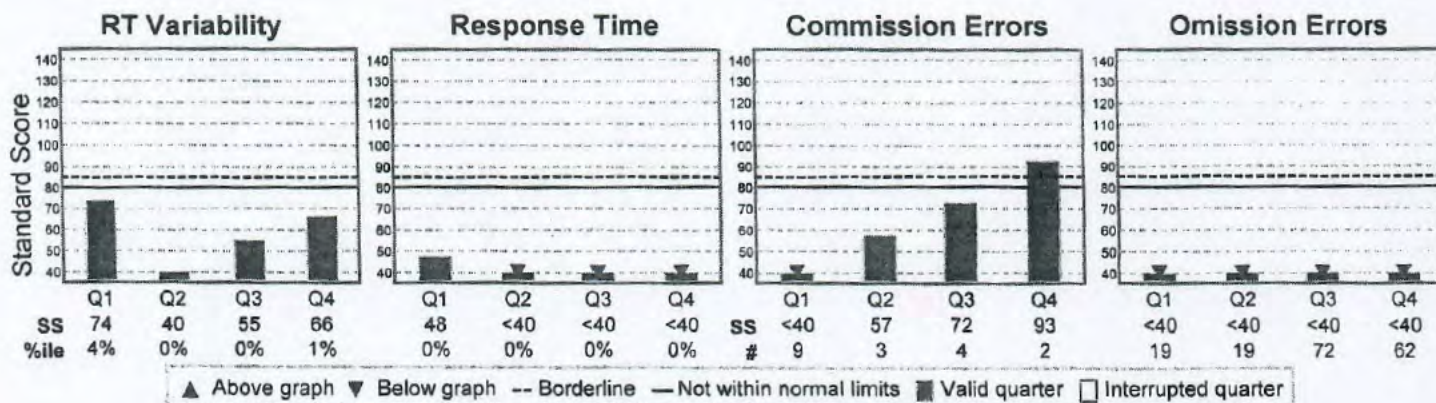
Treatment

No treatments entered.

Comparison to the Normative Sample

These scores compare this subject's performance to the performance of individuals of the same gender and age in the T.O.V.A. Normative Sample, a study of individuals who did not have attention problems.

Results are reported as standard scores (average = 100 with a standard deviation of 15) and are compared to a large normative sample stratified by gender and age. Scores above 85 are within normal limits, 80-85 are borderline, and below 80 are not within normal limits. See the Interpretation Notes page and the Analyzed Data page for more detailed information on these variables and on the subject's performance.





Interpretation Notes

ID: 702 U (2008)
Male - 15y

Auditory T.O.V.A. (v8.3-447 sn20542)
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Notes on the Comparison to the Normative Sample

Variability is a precise measure of variations in correct response times, and measures the consistency of response times. **Variability was not within normal limits in Quarters 1, 2, 3, and 4, Half 1 and 2, and Total.**

Response Time is the average speed of correct responses to targets, and is a measure of information processing speed. **Response Time was not within normal limits in Quarters 1, 2, 3, and 4, Half 1 and 2, and Total.**

Commission Errors occur when the subject incorrectly responds to a nontarget, and are a measure of inhibitory control. **Commission Errors were not within normal limits in Quarters 1, 2, and 3, Half 1 and 2, and Total.**

Omission Errors occur when the subject does not respond to a target, and are a measure of sustained attention. **Omission Errors were not within normal limits in Quarters 1, 2, 3, and 4, Half 1 and 2, and Total.**

Response Patterns

In Q2, Q3, Q4, there were 17 episodes in which three or more omission errors occurred in a row. Usually, Omission Errors tend to be scattered throughout the test, rather than clustered together. Assuming compliance with test instructions, this unusual pattern of performance may be caused by a significant external distraction, severe distractibility, falling asleep (e.g., narcolepsy), the occurrence of seizure(s), or other causes (poor effort, fatigue, etc.).

Commission Error Response Time is the mean response time for Commission Errors. Since Commission Errors are usually fast, impulsive responses, the Commission Error Response Time is usually faster than the Response Time. In Q1, H1, T, the Commission Error Response Time was slower than the Response Time, which is an unusual pattern of performance and may indicate non-compliance or impairment.

Other Notes

Consider administering a Visual T.O.V.A. to this subject for a more comprehensive assessment of attention. This is important because an individual can have markedly different results on one test versus the other.


TOVA
Analyzed Data

 ID: 702 L [REDACTED] U [REDACTED] (2008)
 Male - 15y [REDACTED]

 Auditory T.O.V.A. (v8.3-447 sn20542)
 Aug 28, 2023 at 10:53 AM

Treatment

No treatments entered.

Comparison to the Normative Sample

Results below are reported as standard scores (average standard = 100; standard deviation = 15). Scores indicate deviation from the performance of a large normative sample stratified by gender and age. Standard scores above 85 are considered to be in the normal range, scores between 85 and 80 are considered borderline, and scores below 80 are considered not within normal limits. Scores less than 70 are considered significantly below normal range. Standard scores less than 40 are more than 4 standard deviations from normal and are denoted as "<40". Quarters, Halves and Totals are independently calculated and are not averages.

	Quarter				Half		Total
	1	2	3	4	1	2	
RT Variability	74	40	55	66	46	61	58
Response Time	48	<40	<40	<40	<40	<40	<40
Commission Errors	<40	57	72	93	<40	79	<40
Omission Errors	<40	<40	<40	<40	<40	<40	<40
	Infrequent		Frequent				

Key: Borderline, Not within normal limits, Invalid



Tabulated Data

ID: 702 L [REDACTED] U [REDACTED] ([REDACTED] 2008)
Male - 15y [REDACTED]

Auditory T.O.V.A. (v8.3-447 sn20542)
Aug 28, 2023 at 10:53 AM

This page contains tabulated raw data and documents T.O.V.A. session parameters.

		Quarter				Half		Total
		1	2	3	4	1	2	
RT Variability	ms	176	311	343	314	276	328	325
Response Time	ms	829	1054	1129	1091	941	1109	1070
Post-commission responses #		2	0	0	0	2	0	2
Response Time	ms	986	0	0	0	986	0	986
Variability	ms	287	0	0	0	287	0	287
Commission Errors	#	9/126	3/126	4/36	2/36	12/252	6/72	18/324
Percentage	%	7.1	2.4	11.1	5.6	4.8	8.3	5.6
Response Time	ms	1091	1379	1287	1554	1163	1376	1234
Omission Errors	#	19/36	19/36	72/126	62/126	38/72	134/252	172/324
Percentage	%	52.8	52.8	57.1	49.2	52.8	53.2	53.1
D Prime		1.4	1.91	1.04	1.61	1.6	1.3	1.52
Standard Score		<40	<40	54	61	<40	57	47
Beta		2.92	7.09	2.07	3.56	4.01	2.59	3.55
Anticipatory	%	0.6	0.6	1.2	1.9	0.6	1.5	1.1
To Nontargets	#	1	1	1	0	2	1	3
To Targets	#	0	0	1	3	0	4	4
Multiple Responses	#	0	0	1	1	0	2	2
Total Correct	#	133/162	139/162	84/162	95/162	272/324	179/324	451/648
Correct Responses	#	17/36	17/36	53/126	61/126	34/72	114/252	148/324
Correct Nonresponses	#	116/126	122/126	31/36	34/36	238/252	65/72	303/324
Skew	ms	90	2	219	-42	120	-81	205
User Interrupts	#	0	0	0	0	0	0	0
Hardware errors	#	0	0	0	0	0	0	0
		Infrequent		Frequent				

Session parameters

Format: 1 (standard)
ISI: 2000 ms
Stimulus On Time: 200 ms
Stimulus Off Time: 300 ms
Anticipatory Cutoff: 150 ms

Hardware information

Session mode: EAV
USB device: HW 5, BD 0, FW 1.1-219-gd36f0e2
Microswitch: HW 3, BD 0, FW 9



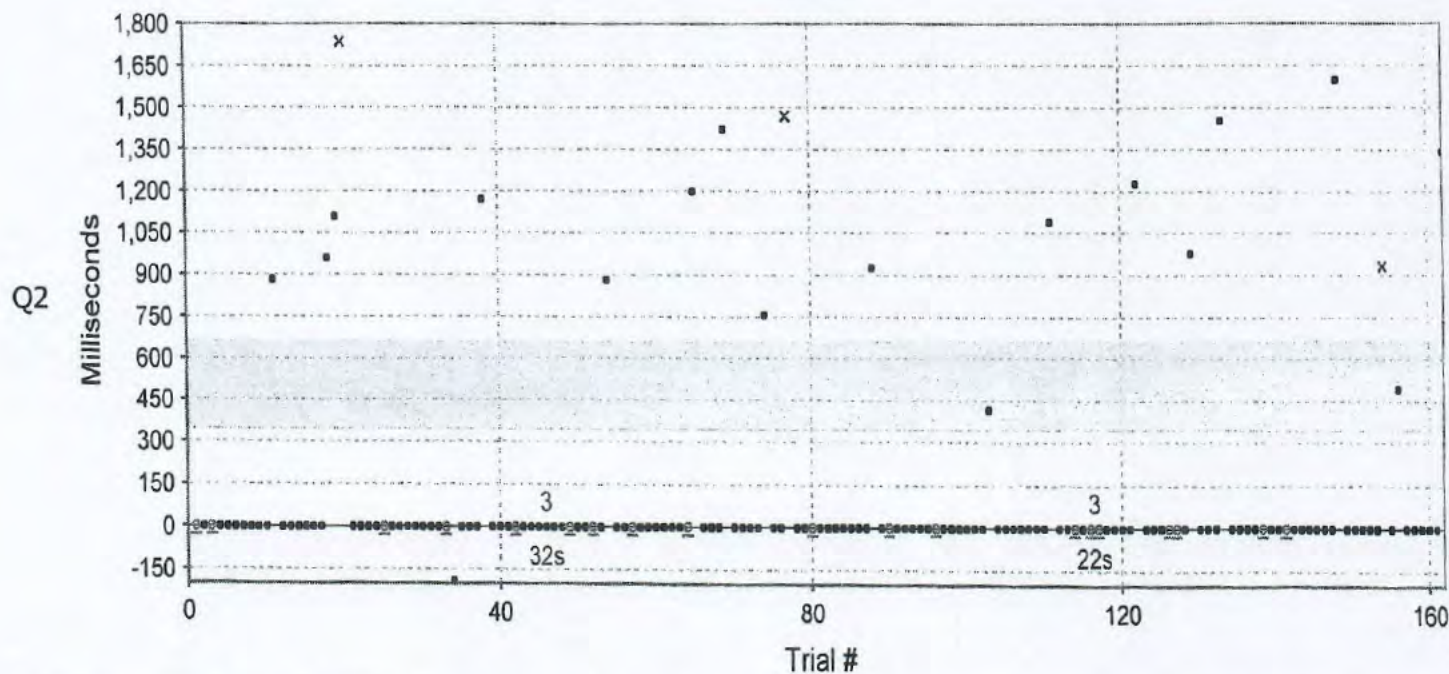
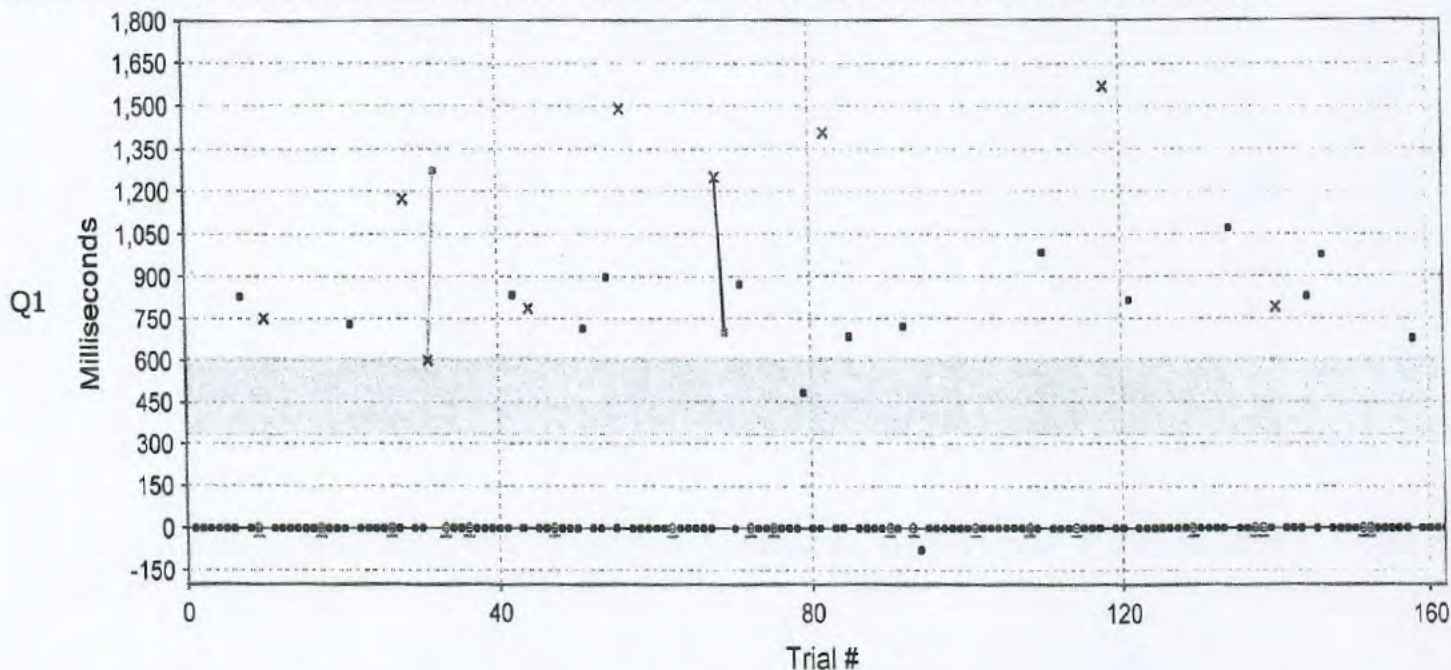
TOVA

Raw Data Graphs

ID: 702 L U (2008)
Male - 15y

Auditory T.O.V.A. (v8.3-447 sn20542)
Aug 28, 2023 at 10:53 AM

This page graphically displays the subject's responses. Black squares mark correct responses and correct nonresponses. Red 'X's mark commission errors, red squares mark anticipatory responses, and underlined red circles mark omission errors. The light gray region represents the normative range of responses. Commission errors followed by a correct response are linked by a line: an upward slope (light gray) indicates slowing down following an error (typical), and a downward slope (black) indicates speeding up after making an error (unusual). Red numbers above the zero line indicate the number of missed targets (if three or more in a row), and the red number below the zero line indicates the number of seconds elapsed between correct target responses.



- Correct response → Correct non-response x Commission error ◻ Omission error ▪ Anticipatory response
- Post-commission error correct response / Slower post-commission RT \ Faster post-commission RT
- ▲▲ Off-scale resp./error ■ Normative range | Interruption 3 10s Response gap (# Targets and Sec)

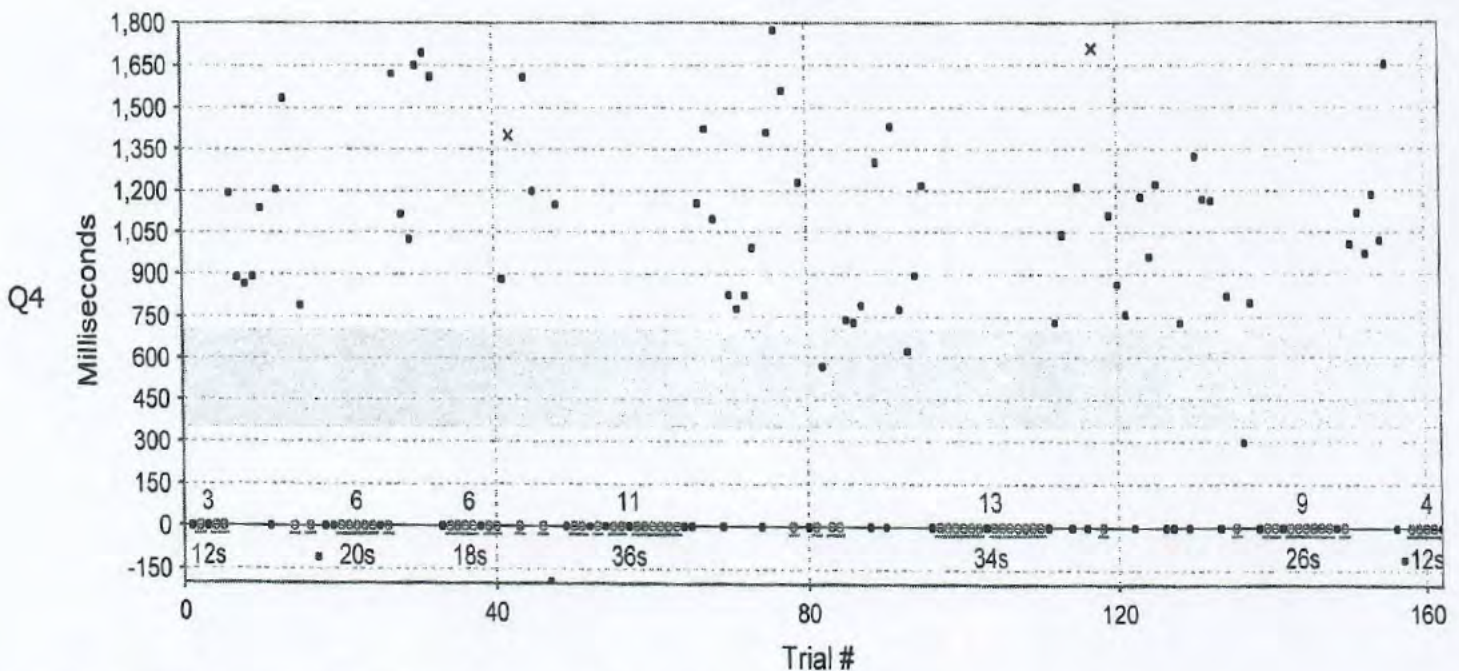
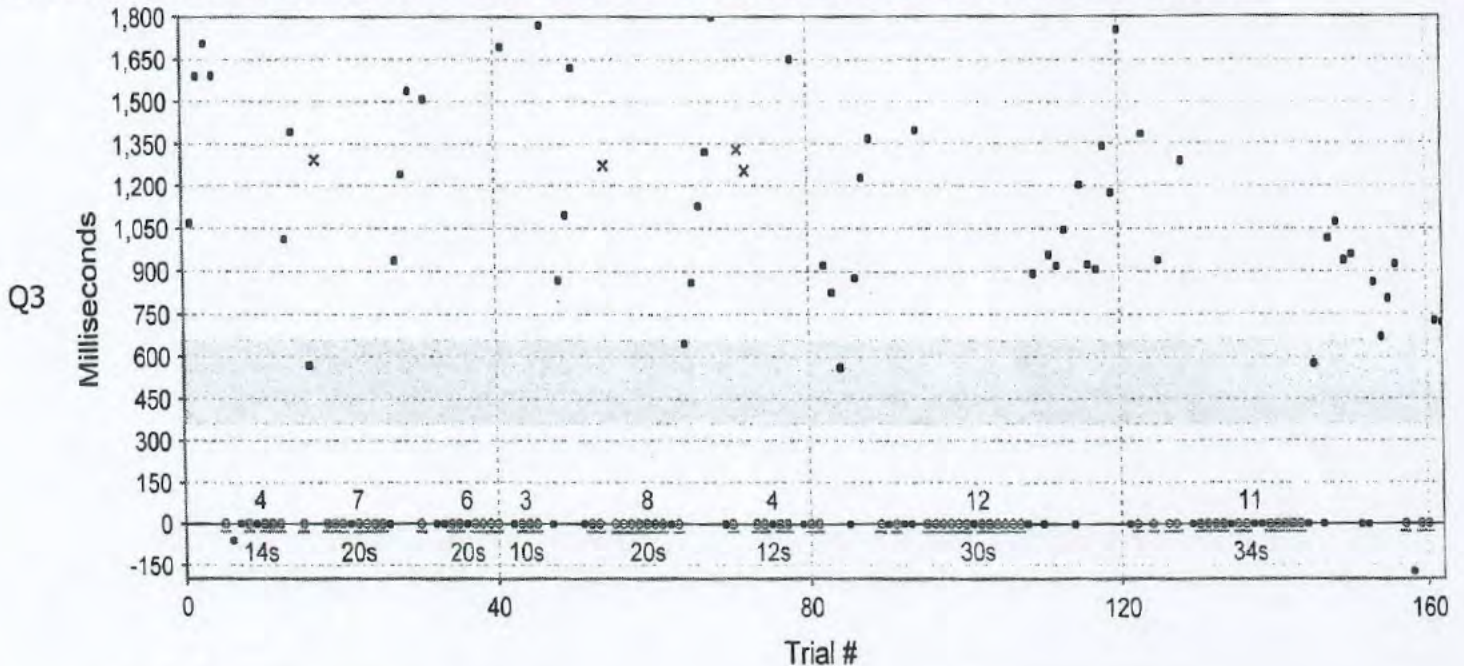


Raw Data Graphs (continued)

ID: 702 L U (Aug 19, 2008)
Male - 15y

Auditory T.O.V.A. (v8.3-447 sn20542)
Aug 28, 2023 at 10:53 AM

This page graphically displays the subject's responses. Black squares mark correct responses and correct nonresponses. Red 'X's mark commission errors, red squares mark anticipatory responses, and underlined red circles mark omission errors. The light gray region represents the normative range of responses. Commission errors followed by a correct response are linked by a line: an upward slope (light gray) indicates slowing down following an error (typical), and a downward slope (black) indicates speeding up after making an error (unusual). Red numbers above the zero line indicate the number of missed targets (if three or more in a row), and the red number below the zero line indicates the number of seconds elapsed between correct target responses.



- Correct response • Correct non-response X Commission error ◯ Omission error • Anticipatory response
- Post-commission error correct response / Slower post-commission RT \ Faster post-commission RT
- ▲▲ Off-scale resp./error X Normative range | Interruption 3 10s Response gap (# Targets and Sec)



TOVA

Raw Data Tables

ID: 702 L [REDACTED] U [REDACTED] ([REDACTED] 2008)
Male - 15y [REDACTED]

Auditory T.O.V.A. (v8.3-447 sn20542)
Aug 28, 2023 at 10:53 AM

This page shows a trial-by-trial view of T.O.V.A. test data. Each entry in the table indicates the stimulus type (target or nontarget) and the subject's response to that stimulus. Error responses are shown in red, and response times are in milliseconds. A negative response time indicates a response that was made before the stimulus was presented.

1-27	28-54	55-81	82-108	109-135	136-162	163-189	190-216	217-243	244-270	271-297	298-324
N	C 1172	N	C 1409	N	N	O	N	N	N	N	N
N	N	C 1490	N	T 984	O	N	N	N	N	N	N
N	N	N	N	N	N	O	N	O	N	T 1092	O
N	C 599	N	T 684	N	N	N	N	N	N	N	N
N	T 1272	N	N	N	C 789	N	N	N	N	N	N
T 827	O	N	N	O	N	N	O	N	O	O	O
N	N	O	N	N	N	NA -191	N	T 927	N	N	N
O	O	N	O	N	T 827	N	N	N	O	O	N
C 749	N	N	N	C 1569	N	N	N	O	N	N	N
N	N	N	T 720	N	T 977	T 882	T 1170	T 1198	N	N	N
N	N	N	NA -77	T 812	N	N	N	N	N	N	N
N	N	C 1249	N	N	N	N	N	N	N	T 1228	N
N	T 833	T 699	N	N	N	N	N	N	N	N	N
N	N	N	N	N	O	N	N	T 1421	O	N	N
O	C 785	T 871	N	N	O	N	N	N	N	N	N
N	N	O	N	N	N	T 959	N	N	N	O	N
N	N	N	N	N	N	T 1109	N	N	N	O	C 933
T 730	N	O	N	O	N	C 1736	N	T 756	N	N	N
N	N	N	N	N	N	N	N	N	N	T 979	T 493
N	N	N	N	N	N	N	O	N	T 417	N	N
N	T 712	N	N	N	T 679	N	N	C 1468	N	N	N
N	N	T 482	N	N	N	N	N	N	N	N	N
O	N	N	N	T 1072	N	O	O	N	N	T 1452	N
N	T 898	N	O	N	N	N	N	O	N	N	N
						N	T 882	N	N	N	T 1341

325-351	352-378	379-405	406-432	433-459	460-486	487-513	514-540	541-567	568-594	595-621	622-648
T 1068	T 1239	O	T 921	T 892	O	N	T 1115	O	T 566	O	T 297
T 1590	T 1539	O	T 826	N	N	O	T 1024	O	O	O	T 800
T 1706	O	O	T 563	T 957	N	N	T 1651	N	O	N	N
T 1592	T 1510	O	N	T 920	O	O	T 1695	O	T 739	T 731	O
O	N	O	T 878	T 1045	O	O	T 1609	O	T 730	T 1040	O
TA -61M	N	O	T 1228	N	O	T 1191	N	O	T 789	N	N
N	O	O	T 1368	T 1204	O	T 888	O	O	N	T 1213	O
O	O	N	O	T 924	O	T 865	O	O	T 1301	N	O
N	N	O	N	T 907	N	T 891	O	O	N	C 1707	O
O	O	T 646	O	T 1338	T 577	T 1137	O	N	T 1430	O	O
O	O	T 862	N	T 1176	N	N	N	N	T 776	T 1109	O
O	O	T 1128	N	T 1753	T 1016	T 1205	O	T 1154	T 625	T 865	O
T 1012	O	T 1320	T 1399	N	T 1073	T 1534	O	T 1424	T 896	T 759	N
T 1392	T 1694	T 1796	O	O	T 940	O	T 883	T 1097	T 1218	N	O
O	N	N	O	T 1384	T 961	T 791	C 1399	N	N	T 1175	T 1008
T 567	O	O	O	O	N	O	O	T 828	O	T 963	T 1119
C 1294	O	C 1329	O	T 939	N	TA -110	T 1607	T 778	O	T 1221	T 974
O	O	C 1252	O	O	T 861	N	T 1197	T 828	O	N	T 1184
O	T 1770	O	O	O	T 671	N	O	T 994	O	N	T 1022
O	N	O	N	T 1287	T 803	O	TA -192M	N	O	T 729	T 1652
N	T 869	N	O	N	T 924	O	T 1149	T 1410	O	N	N
O	T 1096	O	O	O	O	O	N	T 1774	N	T 1321	TA -109
O	T 1620	O	O	O	NA -173	O	O	T 1560	O	T 1169	O
O	N	T 1650	O	O	O	O	O	O	O	T 1162	O
O	O	N	O	O	O	N	N	T 1228	O	N	O
N	O	O	O	N	T 726	O	O	N	O	T 823	O
T 938	C 1272	O	N	O	T 720	T 1621	N	O	O	O	N

T = Correct response to target

O = Omission error

A = Anticipatory response

N = Correct nonresponse to nontarget

C = Commission error

M = Multiple response

Green = Post-Commission-error correct response

U = User interrupt

H = Hardware interrupt